

REMARKS

Original claims 8-20 have been renumbered 7-19 by Examiner. Claims 17 and 18 (as renumbered from claims 18 and 19 by Examiner) have been amended. Claim 20 has been added. Claims 1-20 are pending in this application after entry of this Amendment. No new matter has been added.

Claims 17 and 18 have been amended as suggested by examiner.

Claims 1 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Konrad in view of Blumer et al. (Blumer). Applicants respectfully traverse. The claimed features of the present invention provide an apparatus for remotely controlling a computer over a network. More specifically, the present invention provides a "virtual machine" by allowing a client computer, which is coupled to a TCP/IP protocol network, to remotely control a host computer coupled to the same network. The user of the client computer is able to control the "virtual machine" essentially as if it were their client computer, namely through their local input devices, such as their keyboard and mouse. Since the host computer may be many times more powerful than the user's personal client computer, the "virtual machine" can run applications that may not run properly on the users client computer. Thus, the present invention advantageously allows users to gain the benefits of the powerful computing ability of high end host computers without the associated cost of upgrading their client computers.

The present invention accomplishes this "remote control" by executing a "client program" on the client's browser. The client program, typically a script, creates data which includes input device "events" generated from the client. The client program then transmits this data to the host computer which, by using a host program, decodes the client program data and extracts the "events" embedded within the data. These events are then placed in the event queue of the host computer. In this manner, the client computer can "control operations" of the host computer as if the keyboard, mouse, etc. of the client computer were directly coupled to the host computer.

Simply nowhere in the cited art is there taught or reasonable suggested "a client computer...capable of running a client program...that is delivered over said

network”, as claimed by Applicant. The Konrad client program is not delivered over the network, it is created specifically for, and resides on, the client computer. Further, Blumer simply discloses utilizing a browser to obtain information from a server. There is no mention in Blumer of downloading the client program from a host to the client. In sharp contrast, the client program of the present invention is delivered over the network. By delivering the client program via the network, only the host computer needs to have any special software installed to run the “virtual machine.” The browser of the present invention actually runs the client program delivered to the client computer over the network. Thus, the client computer only needs have installed a typical browser program, and not a specially installed client program. An advantage to having the browser run the client program is that the client program can be platform independent. Running a client program on an operating system, as does Konrad, requires platform specific code. In contrast, the client program of the present invention, which runs in a typical browser, no longer must communicate with the operating system directly, and thus may run on any system capable of running a script enabled browser.

In view of the foregoing, it is clear that the art of record neither teaches nor reasonably suggests the Applicants’ claimed invention. Accordingly, it is respectfully submitted that claims 1 is patentable over the art of record.

Claims 2-11 (as renumbered by Examiner) all depend directly or indirectly from independent claim 1. Accordingly, they are each submitted to be patentable over the art of record for at least the reasons set forth above with respect to independent claim 1. These claims add further limitations, which when considered in light of the claimed combination, further patentably distinguish the present invention from the art of record.

Claim 12 (as renumbered from original claim 13 by Examiner) was rejected under 35 U.S.C. § 103(a) as being unpatentable over Konrad in view of Blumer et al. (Blumer). Applicant respectfully traverses. Simply nowhere in the cited references is there disclosed a step of “detecting changes in said image outputs of said host computer and transmitting image updates corresponding to said changes to said client computer for use by said client program”, as claimed by Applicants. The host computer disclosed in both Konrad and Blumer transmits all image data generated to

the client. In contrast, the host computer of the present invention detects changes in the image outputs and then sends those changes to the client computer. An advantage to detecting for changes to the image is increased speed and efficiency. There is no need to send the same image data to the client when there are no changes to the image outputs, since the client is already displaying the image data. Thus, transmission delays are avoided and, in addition, other data may be transferred in place of the static image data.

In view of the above, it is clear that the art of record neither teaches nor reasonably suggests the Applicants' claimed invention. Accordingly, it is respectfully submitted that claim 12 (as renumbered by Examiner) is patentable over the art of record.

Claims 13-18 (as renumbered by Examiner) all depend directly or indirectly from independent claim 12. Accordingly, they are each submitted to be patentable over the art of record for at least the reasons set forth above with respect to independent claim 12. These claims add further limitations, which when considered in light of the claimed combination, further patentably distinguish the present invention from the art of record.

Claim 19 (as renumbered from original claim 20 by Examiner) was rejected under 35 U.S.C. § 103(a) as being unpatentable over Konrad in view of Blumer et al. (Blumer). Applicant respectfully traverses. Simply nowhere in Konrad or Blumer is there taught or reasonably suggested "controlling said host computer with said client computer over said network, such that said input device events of said client computer can be acted upon by said host computer," as claimed by Applicant. Input device events, as known in the art, are generated by input devices and include an associated handler which is passed the details of the event, e.g. mouse button 3 pressed at position (355,990). The data sent in both Konrad and Blumer is merely text data, or other generic file data. Neither Konrad or Blumer teaches sending the actual event that is generated by an input device and placed in an event queue.

Messaged based operating system, such as Win95 or Macintosh System 7, respond to input devices through an event queue, which is populated by events generated from input devices. Accordingly, an advantage of sending the actual events

generated by client input devices to the host computer is that much more data can be acted on and utilized by the host computer. By sending events, the host computer is able to place the same events generated by the clients input device into the host computer's event queue. Thus, the host is able to respond to a client input device in the same manner the client computer would, namely through its event queue.

In view of the above, it is clear that the art of record neither teaches nor reasonably suggests the Applicants' claimed invention. Accordingly, it is respectfully submitted that claim 19 (as renumbered by Examiner) is patentable over the art of record.

Claim 20 depends directly from independent claim 19. Accordingly, claim 20 is submitted to be patentable over the art of record for at least the reasons set forth above with respect to independent claim 19. Claim 20 adds further limitations, which when considered in light of the claimed combination, further patentably distinguishes the present invention from the art of record.

In view of the foregoing, Applicants respectfully request reexamination and reconsideration of claims 1-20 and submit that all pending claims are in condition for allowance. Accordingly, a Notice of Allowance is respectfully requested. In the event that the Examiner believes that a telephone conference would expedite the prosecution of this application, the undersigned may be reached at (650) 470-7430.

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